

**IN THE CLAIMS:**

1 1. 76. (Cancelled)

1 77. (Currently Amended) A method for managing a computer network, comprising:

2 operating a plurality of servers connected to the network, each server of the plu-

3 rality of servers connected to one or more storage devices, ~~each storage device of the one~~

4 ~~or more storage devices having one or more data storage disks;~~

5 organizing a plurality of volumes across the plurality of servers, wherein each

6 volume is a logical arrangement of the one or more storage devices connected to a par-

7 ticular server~~assigning selected storage devices of the one or more storage devices to a~~

8 ~~particular volume, the one or more storage devices assigned to a plurality of volumes;~~

9 consolidating ~~one two~~ or more selected volumes of the plurality of volumes into a

10 group of volumes ~~to produce a plurality of group of volumes~~ using a graphical user inter-

11 face, wherein at least two volumes in the group of volumes are located on separate serv-

12 ers of the plurality of servers;

13 identifying a party interested in statistical information related to operation of ~~a the~~

14 ~~selected~~ group of volumes using the graphical user interface;

15 polling all volumes within the ~~selected~~ group of volumes ~~of the plurality of~~

16 ~~groups of volumes~~, by a monitoring process, for statistical information;

17 displaying, on the graphical user interface, statistical information relating only to

18 the group of volumes;

19 comparing the monitored statistical information to a threshold value to determine  
20 whether an event has occurred; and  
21 in response to determining that an event has occurred, notifying the interested  
22 party.

1 78. (Previously Presented) The method according to Claim 77, further comprising:  
2 determining the identity of the party in response to a predetermined event condi-  
3 tion.

1 79. (Currently Amended) The method according to Claim 78, further comprising:  
2 setting a the threshold value for a parameter of a storage device in a the group of  
3 volumes ~~predetermined group~~; and  
4 determining the event condition in response to the parameter exceeding the  
5 threshold value.

1 80. (Previously Presented) The method according to Claim 79, further comprising:  
2 including in the parameters at least one of a central processing utilization level, a  
3 storage disk free space, a storage disk used space, and environmental condition, and an  
4 operational status.

1 81. (Previously Presented) The method according to Claim 77, further comprising:  
2 sending by e-mail to the party a notification of the statistical information related  
3 to the selected group of volumes.

1 82. (Previously Presented) The method according to Claim 81, further comprising:  
2 including at least one web link in the e-mail for use by the interested party.

1 83. (Previously Presented) The method according to Claim 77, further comprising:  
2 retaining information with respect to the interested party in a database.

1 84. (Currently Amended) The method according to Claim 77, further comprising:  
2 reporting the statistical information related to the ~~selected~~ group of volumes to a  
3 web page so that the party can obtain the statistical information by accessing the web  
4 page.

1 85. (Currently Amended) The method according to Claim 77, further comprising:  
2 presenting the statistical information related to the ~~selected~~ group of volumes  
3 through a graphical user interface.

1 86. (Currently Amended) The method according to Claim 77, further comprising:  
2 placing alerts on the graphical user interface, the alerts identifying a problem  
3 condition shown by the statistical information related to the ~~selected~~ group of volumes.

1 87. (Previously Presented) The method according to Claim 86, further comprising:  
2 coding the alerts with color to indicate a severity of the problem condition.

1 88. (Currently Amended) The method according to Claim 77, further comprising:  
2 consolidating the statistical information related to the ~~selected~~ group of volumes  
3 with a statistical information related to an another ~~selected~~ group of volumes.

1 89. (Previously Presented) The method according to Claim 77, further comprising:  
2 using a RAID array of disks as a storage device of the one or more storage  
3 devices.

1 90. (Currently Amended) A computer network apparatus, comprising:  
2 a plurality of servers, each server of the plurality of servers connected to one or  
3 more storage devices, ~~each storage device of the one or more storage devices having one~~  
4 ~~or more data storage disks;~~

5        a plurality of volumes stored across the plurality of servers, wherein each volume  
6        is a logical arrangement of the one or more storage devices connected to a particular  
7        server~~a selected storage device of the one or more storage devices assigned to a particular~~  
8        ~~volume, the one or more storage devices assigned to a plurality of volumes;~~

9        a group of volumes formed by consolidating ~~one~~ two or more selected volumes of  
10       the plurality of volumes ~~into the group of volumes to produce a plurality of groups of vol-~~  
11       ~~umes~~ using a graphical user interface, wherein at least two volumes in the group of vol-  
12       umes are located on separate servers of the plurality of servers;

13       statistical information related to operation of ~~a selected~~ the group of volumes, the  
14       statistical information identified as being of interest to a party using the graphical user  
15       interface;

16       a monitoring process used to poll all volumes within the ~~selected~~ group of vol-  
17       ~~umes of the plurality of group of volumes;~~

18       the graphical user interface further configured to display statistical information re-  
19       lating only to the group of volumes;

20       the monitored statistical information is compared to a threshold value to deter-  
21       mine whether an event has occurred; and

22       the party is notified if it is determined that an event has occurred.

1       91. (Previously Presented) The apparatus according to Claim 90, further comprising:

2           an event condition, the identity of the party determined in response to the event  
3   condition.

1   92. (Currently Amended) The apparatus according to Claim 91, ~~further compris-~~  
2   ~~ing;~~ wherein the  
3           ~~a~~ threshold value is set for a parameter of a storage device in ~~a predetermined the~~  
4   group of volumes; and  
5           the event condition is determined in response to the parameter exceeding the  
6   threshold value.

1   93. (Previously Presented) The apparatus according to Claim 92, further comprising:  
2           the parameters selected from at least one of a central processing utilization level, a  
3   storage disk free space, a storage disk used space, and environmental condition, and an  
4   operational status.

1   94. (Previously Presented) The apparatus according to Claim 90, further comprising:  
2           an e-mail message sent to the party, the e-mail message referring to the statistical  
3   information related to the selected group of volumes.

1 95. (Previously Presented) The apparatus according to Claim 94, further comprising:  
2 at least one web link included in the e-mail message for use by the interested  
3 party.

1 96. (Previously Presented) The apparatus according to Claim 90, further comprising:  
2 a database to retain information with respect to the interested party.

1 97. (Currently Amended) The apparatus according to Claim 90, further comprising:  
2 a web page to report the statistical information related to the ~~selected~~ group of  
3 volumes so that the party can obtain the statistical information by accessing the web  
4 page.

1 98. (Currently Amended) The apparatus according to Claim 90, further comprising:  
2 a graphical user interface to present the statistical information related to the ~~se-~~  
3 ~~lected~~ group of volumes.

1 99. (Currently Amended) The apparatus according to Claim 98, further comprising:  
2 alerts placed on the graphical user interface, the alerts identifying a problem  
3 condition shown by the statistical information related to the ~~selected~~ group of volumes.

1    100. (Previously Presented) The apparatus according to Claim 99, further comprising:  
2                    color to code the alerts to indicate a severity of the problem condition.

1    101. (Currently Amended) The apparatus according to Claim 90, further comprising:  
2                    the statistical information related to the ~~selected~~ group of volumes consolidated  
3                    with a statistical information related to an another ~~selected~~ group of volumes.

1    102. (Previously Presented) The apparatus according to Claim 90, further comprising:  
2                    a RAID array of disks used as a storage device of the one or more storage devices.

1    103. (Currently Amended) A computer readable media, comprising:  
2                    said computer readable media containing instructions for execution on a processor  
3                    for the practice of a method of managing a computer network, the method having the  
4                    steps of,  
5                    operating a plurality of servers connected to the network, each server of the plu-  
6                    rality of servers connected to one or more storage devices, ~~each storage device of the one~~  
7                    ~~or more storage devices having one or more data storage disks;~~  
8                    organizing a plurality of volumes across the plurality of servers, wherein each  
9                    volume is a logical arrangement of the one or more storage devices connected to a par-



10 ~~particular server assigning selected storage devices of the one or more storage devices to a~~  
11 ~~particular volume, the one or more storage devices assigned to a plurality of volumes;~~  
12       consolidating ~~one~~ two or more selected volumes of the plurality of volumes into a  
13 group of volumes ~~to produce a plurality of group of volumes~~ using a graphical user inter-  
14 face, wherein at least two volumes in the group of volumes are located on separate serv-  
15 ers of the plurality of servers;  
16       identifying a party interested in statistical information related to operation of ~~a~~ the  
17 ~~selected group of volumes~~ using the graphical user interface;  
18       polling all volumes within the selected group of volumes ~~of the plurality of~~  
19 ~~groups of volumes~~, by a monitoring process, for statistical information;  
20       displaying, on the graphical user interface, statistical information relating only to  
21 the group of volumes;  
22       comparing the monitored statistical information to a threshold value to determine  
23 whether an event has occurred; and  
24       in response to determining that an event has occurred, notifying the interested  
25 party.

1 104. (New) A system, comprising:

2       a plurality of storage appliances, wherein each storage appliance is configured  
3 with at least one volume and each volume is a logical arrangement of a plurality of stor-  
4 age devices;

5 a management station executing on a separate server from the plurality of storage  
6 appliances, the management station configured to access usage and performance informa-  
7 tion on the plurality of storage appliances and associated volumes;

8 a graphical user interface (GUI) connected to the management station, the GUI  
9 configured to allow a user to organize two or more volumes from the plurality of storage  
10 appliances into a group of volumes, and the GUI configured to display statistical informa-  
11 tion relating to the group of volumes, wherein at least two volumes in the group of vol-  
12 umes are located on separate storage appliances of the plurality of storage appliances;

13 a management station storage device connected to the management station, the  
14 management station storage device configured with a database, the database storing in-  
15 formation about the group of volumes and a threshold value associated with statistical  
16 information of the group of volumes;

17 the management station further configured to compare monitored statistical in-  
18 formation of the group of volumes with the threshold value and determine an event has  
19 occurred when the monitored statistical information exceeds the threshold value and to  
20 notify an interested party of the event.

1 105. (New) The system of claim 104, wherein the statistical information stored on the  
2 database is bundled in various time periods of days, weeks, quarters, or years that each  
3 have roughly a same number of intervals, each bundle having a different relative time  
4 span between respective intervals to have samples for more recent time periods main-

5     tained in smaller intervals, while samples for older time periods are maintained at succes-  
6     sively longer sample intervals.

1     106. (New) The system of claim 104, wherein the management station is connected over  
2     a LAN to the plurality of storage appliances.

1     107. (New) The system of claim 104, wherein each volume is formed from two or more  
2     RAID groups within the plurality of storage devices.

1     108. (New) The system of claim 104, wherein the interested party is notified by an email,  
2     alarm, alert, telephone call, or page that is sent using an automated system.

1     109. (New) The system of claim 104, wherein the interested party is one or more users,  
2     administrators, or managers.

1     110. (New) The system of claim 104, further comprising:  
2             a command process that generates displays on the statistical information using a  
3     web-based format that is accessed by a browser on the management station's graphical  
4     user interface or on an interested party's client display.